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IMPROVING AMERICAN COTTON

A radio interview between M. S. Eisenhower, Director of Information, and H. W. Barre, in charge of Cotton Division, Bureau of Plant Industry, broadcast in the Department of Agriculture period, National Farm and Home Hour, Tuesday, June 18, 1935, by 51 stations associated with the National Broadcasting Company.

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SALISBURY:

Well... Tuesday again brings to the microphone Mr. M. S. Eisenhower, Director of Information for the Department, to unfold for you another story of how agricultural scientists are tackling and working toward the solution of some of the important agricultural problems of the day. Mr. Eisenhower--

EISENHOWER:

Thanks, Morse, - and hello, everyone.

A few weeks ago, Mr. H. W. Barre, who is in charge of the cotton work of the Bureau of Plant Industry came here to the studio with me and we talked with you about the Department's coordinated research program on cotton. At that time, I told you we would pick up the story again in a later broadcast to sketch research developments on specific problems of the cotton industry. That's what I want to do today -- I want to tell you why the research and extension people in the Department and in the State colleges and experiment stations urge cotton farmers to grow high quality cotton in one variety communities.

Let's begin by going back to the early efforts of the American cotton industry to establish itself in the world textile fiber markets.

As you know, cotton isn't a native of this country; it originated in such tropical sections as the West Indies, South America, tropical Africa, and South Asia. But, from the very earliest colonial days, the settlers experimented with cotton in the colonies. In 1784, a man in one of the southern States sent eight bags of cotton to a merchant in Liverpool. The customs officers at Liverpool seized the cotton; they claimed it could not have been grown in the United States. Even after the customs officers finally released the cotton, it lay for many months unsold. The British spinners doubted that American cotton was of sufficiently high quality for textile purposes.

Shortly after that time, the cotton industry in this country began to grow like a mushroom. Today, cotton is this country's most important commercial crop. We produce more than half of the cotton grown in the world. But, back of the phenomenal rise of King Cotton lies a dramatic struggle to produce cotton of superior quality.

So, today, I have asked Mr. Barre to come to the microphone again and tell you a little about the work of the plant scientists to maintain the reputation of the American cotton industry for a high quality product.
Mr. Barre--

BARRE:

Thank you, Mr. Eisenhower -- and good afternoon, Farm and Home Hour friends.

EISENHOWER:

Mr. Barre, as I understand it, some sections of the country have produced high quality cotton from the very earliest days. The early American farmers developed some very high quality varieties, didn't they?

BARRE:

Yes, some of those early growers had the knack of seeing the good points in cotton, and of selecting and reproducing strains that produced those desired qualities.

EISENHOWER:

I suppose the famous Sea Island cotton is one of the best examples of the early superior varieties.

BARRE:

Yes. The growers on the islands off the southeastern coast of the United States carefully selected and planted seed from the better cotton in their fields; for more than a hundred years they continued to breed the cotton for special purposes and jealously guarded their seed stocks against mixtures from outside.

EISENHOWER:

And, from that careful selection, those growers produced a cotton with a long, fine, silky fiber.

BARRE:

Yes. Those growers produced long fiber cotton for sewing thread and the very finest grade of cotton cloth. Many of those planters had regular customers in England and America who bought their cotton year after year. At the same time, growers in the Mississippi Valley, and other parts of the South, also developed high grade Upland strains, which manufacturers used for special purposes.

EISENHOWER:

And, just like the Sea Island cotton, each of the improved varieties was characteristic of a particular section of the Cotton Belt.

BARRE:

That's true. And the cotton industry knew cotton variety or quality by regional names. For example, in the bends of the Mississippi River, the old river boats picked up the rather long cotton, known for a long time as "benders." Along the rivers pouring into the Mississippi, they found extra long, silky cotton, but not quite up to the bender type. They called the cotton from those localities, "rivers."

EISENHOWER:

Very appropriate. I suppose those so-called "creek" varieties came from the still smaller streams, or creeks.

BARRE:

They did. Now, the origin of those regional names to describe cotton quality has a deep significance.

You see, the secret of the success of the American cotton industry in the past century hinges to a considerable extent on two main points.

EISENHOWER:

Well, to begin with, by a long period of selection, cotton growers developed superior lines of cotton.

BARRE:

That's right. But second -- and always keep this point in mind -- they restricted these improved varieties to particular sections.

EISENHOWER:

That is, they kept their improved lines pure, or free from mixtures.

BARRE:

Exactly.

EISENHOWER:

Well, the cash cotton industry developed superior cotton. But along during the latter part of the past century, the cotton industry hit some snags; cotton quality declined. Possibly a brief review of what happened may throw some light on some of our quality problems even today.

BARRE:

Well, in the first place, beginning with the late '60's, there was a general increase in the number of small independent farms. You see, under the old plantation system, each plantation usually grew just one variety of cotton; it usually had its own gin. But, with the increased number of small, independent farms, the public gin sprang up to serve the small farmer who did not have enough cotton to justify buying ginning equipment.

EISENHOWER:

Then, the mixing of varieties started.

BARRE:

Yes. Of course, you know what happens to cotton at the public gin.

EISENHOWER:

Well, I'm not from the cotton country. But, as I understand it, part of the cottonseed from one wagon load of cotton remains in the gin and becomes mixed with the seed in the next lot.

BARRE:

That's right. From actual observations, cotton specialists have found that as much as 60 pounds of seed may remain in the seed roll from one load to the next.

EISENHOWER:

So, even though a man has a pure strain of cotton, the seed may be mixed up with the seed of another man's cotton at the public gin.

BARRE:

Exactly.

Then, along with the development of the public gin, went the extension of the railroads. The railroads broke down the barriers of distance between the cotton regions. They paved the way for wholesale mixing of the various regional varieties. As transportation developed, the seed trade developed. Seedsmen distributed a wide variety of seed from here, there, and everywhere. A great many folks began to get the idea that the farther away from home they got their seed, and the higher price they paid, the better. To satisfy the demand for new, novel varieties, some unscrupulous seedsmen even went so far as to sell old, established varieties under new fancy names. Varieties were getting pretty badly mixed up.

EISENHOWER:

Then, of course, to top off those problems, the bollweevil hit the Cotton Belt.

BARRE:

Yes, the weevil began its march up from the Southwest corner of the Cotton Belt along about 1900.

EISENHOWER:

And, of course, the weevil just about finished upsetting the work of those early, far-sighted farmers and breeders. Farmers had to throw away their famous high-quality, late-maturing varieties. In their stead, they began to plant the early-short-stapled varieties.

BARRE:

That's what happened. Growers picked up seed of the newer early-maturing varieties at commercial gins, oil mills, or wherever they could get it. In addition, to meet the boll weevil situation, breeders of that period seemed to have selected cotton on the basis of earliness and yield with little regard for quality.

EISENHOWER:

So, after a period when it had reached a high level of efficiency, the cotton industry faced an entirely new set of conditions; it was forced to start all over again almost from scratch.

BARRE:

That's right to a certain extent. But in South Carolina, Webber and Coker had begun to breed Upland cottons with longer staple and better quality. In the meantime the United States Department of Agriculture, the State agricultural experiment stations, and the private breeders began to rebuild from the wreckage. They began to develop varieties successful under boll weevil conditions, but, at the same time, varieties with long fiber and other desirable qualities.

EISENHOWER:

And the breeders have made remarkable progress.

BARRE:

Yes, they have developed a large number of improved varieties such as the high-quality, long-fiber Pima cotton for the Southwest, Acala and other big boll cottons for large areas west of the Mississippi, and such long staple cottons as Express, Delfos, Stoneville, and D. & P. L. for the boll weevil country of the Mississippi Valley. Then, of course, for the Southeast and other States where wilt attacks cotton, the breeders have developed varieties to withstand wilt and improved high-yielding strains of better quality such as Cleveland, Mexican Big Boll, and Farm Relief.

EISENHOWER:

But, even after the breeders developed them, those new, improved varieties didn't seem to take hold very successfully. What was the reason?

BARRE:

Well, in the first place, because of the marketing system. You see, with varieties scattered and mixed in a hopeless fashion, the single individual in a community who produced the high quality cotton didn't get any better price than his neighbor who produced poor cotton. So, farmers didn't have much incentive to specialize in improved varieties. In the second place, even after the breeders distributed improved seed stock, the improved stock got mixed up pretty quickly with the inferior stock. Of course, some of the early, far-sighted growers took steps to keep their varieties pure. I'll say more about that in a moment.

EISENHOWER:

Well, of course, in recent years, the situation has been changing. The cotton textile mills are demanding better cotton with special, definite qualities.

BARRE:

Quite true. This new demand for quality is influencing breeders as well as growers. Until the spinners began to get more particular about quality, and until we learned more about how to measure and develop quality, we aimed mainly for high yields. At one time, we produced a great deal of three-quarter-inch cotton. At present, we have raised our standards until the American market will accept nothing shorter than seven-eighths of an inch. Our breeders are now aiming for cotton with a fiber one inch long, or longer.

EISENHOWER:

I take it that long fiber isn't the only requirement. The spinners are demanding cotton with a uniform-length fiber, and also a strong fiber, and so on.

BARRE:

Yes, as we produce long fiber, we also must produce uniform and strong fiber. A classer may say a sample of cotton has an inch staple. Actually, only about a quarter of the fibers in that sample may measure an inch. The rest may range all the way down to nothing. In spinning, the extra long fibers in that sample are likely to break; the very short fibers go out as waste. The greater the variation in length, the poorer the cotton for spinning purposes. Of course, I don't know that we ever can get rid of all of that variation. But we can get rid of some of it. We can get rid of part of the variation by breeding. Part of it is due to a lack of moisture during the growing season, and other growth factors. Through our breeding work, and our studies of growth factors, and so on, we can produce cotton with a longer staple, a more uniform and stronger fiber, and the other qualities the cotton textile industry now demands.

EISENHOWER:

With the development of these new, improved varieties, the American cotton grower should be in a position to still further recover the ground he lost through those series of set-backs he suffered in the years just before and after the turn of the century.

BARRE:

Yes, so far as varieties are concerned. But the cotton industry faces still one more important quality problem.

As we pointed out a moment ago, in the so-called Golden Age of cotton back in the 18 hundreds, various sections of the cotton country were recognized for particular varieties and qualities of cotton. Improved transportation, the boll weevil, and other factors broke up that system. As we have moved ahead with the development of new, improved varieties, the cotton industry has had to devise a new plan to keep varieties pure and to build up a large enough supply of high quality cotton to attract buyers. Changing conditions, and the increasing demand for special types of cotton, have forced us to go beyond the original system of general regional types, kept pure by poor transportation facilities; we have had to get down to a specialization in superior varieties on an individual community basis. Over a period of years, we gradually have come more and more to the one-variety community idea.

EISENHOWER:

In the one-variety community, farmers organize to grow one single variety of cotton; and, of course, that variety a good one. They send their cotton to a gin where no other variety is ginned. They keep their improved variety free from mixtures. As a result, they gradually build up a reputation for their cotton just as the Sea Island growers built up a reputation for their Sea Island cotton; they get a premium for their superior product.

BARRE:

That's right.

EISENHOWER:

So, as you see it, Mr. Barre, if American cotton growers are to hold their market in the face of the increasing demand for quality cotton, they must do two things: First, grow improved varieties; second, grow those improved varieties in one-variety communities.

BARRE:

Exactly. To those who are interested in maintaining the reputation of American cotton, I suggest this: Check with your county agricultural agents or State agricultural colleges for the latest facts about improved varieties for your locality, and about how to organize a cotton community on a one-variety basis.

EISENHOWER:

Well, thank you very much, Mr. Barre, for this interesting review of the program to improve the quality of American cotton.

And now, to you listeners, good-bye until this same time next Tuesday when I'll tell you about some interesting developments in the transportation and storage of fruits and vegetables.

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